

**Amendments to the Drawings:**

The attached sheets of drawings include changes to Figs. 7A and 7B. These sheets replace the original sheets including Figs 7A and 7B.

Attachment: Replacement Sheet (2)

Annotated Sheet Showing Changes (2)

### **REMARKS/ARGUMENTS**

This communication is responsive to Office Action of July 23, 2004 in which the following objections were raised: [1] The drawings were objected to because multiplexer 408 in Figure 5 was shown as demultiplexer; [2-3] The abstract of the disclosure was objected to because of improper contents; [4] The disclosure was objected to because of informalities; [5] Claims were objected to because of informalities; [6-8] Claims 1-14 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement; [9-15] Claim 1-14 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter; [16-17] Claims 1, 8 and 9 were rejected under 35 U.S.C. 102(e) as being clearly anticipated by Laroia et al. (U.S. Patent No. 6,628,722 B1).

Applicant appreciates the Examiner's detailed Office Action. Applicant has amended all remaining Claims 1-4, 8, 10-13 and canceled Claims 5-7, 9, 14.

#### **1. DRAWING OBJECTION AND REPLACEMENT SHEETS FOR FIGS. 7A-7B:**

The drawings were objected to because multiplexer 408 in Figure 5 was shown as demultiplexer.

Applicant has amended the specification to reference element 408 as a demultiplexer thereby bringing the specification into conformance with the element 408's function as shown in Fig. 5.

Applicant has submitted redline and replacement sheets for FIGS. 7A-7B to correct certain informalities and to remove the inverter in the Walsh encoder 342B to conform that circuit to the input and output frame sets in which no inversion is shown. "*The Walsh code for the DSP 218B is orthogonal to that assigned to DSP 218A.*" (Specification at page 16, line 21-22, and page 17 line 20-21)

#### **2-3. ABSTRACT OBJECTED BECAUSE OF IMPROPER CONTENTS:**

The abstract of the disclosure was objected to because of improper contents.

Applicant has amended the abstract to overcome the objection.

**4. DISCLOSURE OBJECTED TO BECAUSE OF INFORMALITIES:**

The disclosure was objected to because of informalities.

Applicant has amended the Specification to correct the objected to informalities. In addition to those corrections required by the Examiner, Applicant has amended the specification to include the frame boundary references 704A-706A in the paragraph beginning on page 16, line 6.

**5. CLAIMS OBJECTED TO BECAUSE OF INFORMALITIES:**

The Claims were objected to because of informalities.

Applicant has amended the Claims to correct the objected to informalities.

**6-14. CLAIMS 1-14 REJECTED UNDER 35 U.S.C. 112:**

Claims 1-14 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement, and second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter.

Amendments to Independent Claims 1 and 10 have been made to include the limitations of “...replicating data in the transmitted communication channel...” (Amended Claim 1) and “...replicating data associated with the upstream ...and...downstream communication channel...” (Amended Claim 10). Dependent Claims 3, 12 and 4, 13 include the further limitations of duplicating each tone set and duplicating tones within each tone set respectively. These two types of replication of transmitted data are fully set forth in the specification and drawings including: “The encoder generates a tone set with twice the number of tones as input.”(Specification at page 16, lines 18-19 and FIG. 7A). “The encoder ...generates two tone sets with the same number of tones as the input tone set...”(Specification at page 17, lines 16-17). “There is redundancy in one of the frequency or the time domain for the upstream DMT symbols. Where redundancy in the frequency domain is implemented a single set of DMT symbols contains redundancy of order R for the

*symbol set. Where redundancy is expressed in the time domain successive sets of DMT symbols contain redundancy of order R.”(Specification at page 8, lines 6-9)*

Amendments to all remaining objected to Claims have also been made to overcome the corresponding objections.

**16-17. CLAIMS 1, 8 AND 9 REJECTED UNDER 35 U.S.C. 102(e):**

Claims 1, 8 and 9 were rejected under 35 U.S.C. 102(e) as being clearly anticipated by Laroia et al. (U.S. Patent No. 6,628,722 B1).

Applicant has amended Independent Claim 1 and canceled Claim 9. As amended Independent Claim 1 includes the limitations of “*a Fourier transform engine for transforming transmitted and received communication channels...using a common set of tones spanning a shared frequency range...*”(Amended Independent Claims 1 and 10) and an encoder and decoder using first and second code sequences orthogonal to each other to process the transmitted and received communication channels. Neither of which limitations are disclosed in the Laroia reference.

The Applicant therefore respectfully submits that Independent Claim 1 has been amended to overcome the rejection. Remaining rejected Claim 8 depends from Independent Claim 1 and is therefore also believed to have been placed in a condition for allowance for the reasons discussed above and for other reasons of independent significance.

## **CONCLUSION**

In view of the above remarks, and the amendments to the Claims, Applicant respectfully submits that all remaining Claims 1-4, 8, 10-13 have been placed in a condition for allowance, and requests that they be allowed. Early notice to this effect is solicited.

The Commissioner is authorized to charge any additional fees which may be required, including petition fees and extension of time fees to Deposit Account No. 50-1338 (Docket No. VELCP009C).

Respectfully submitted,

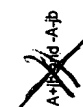
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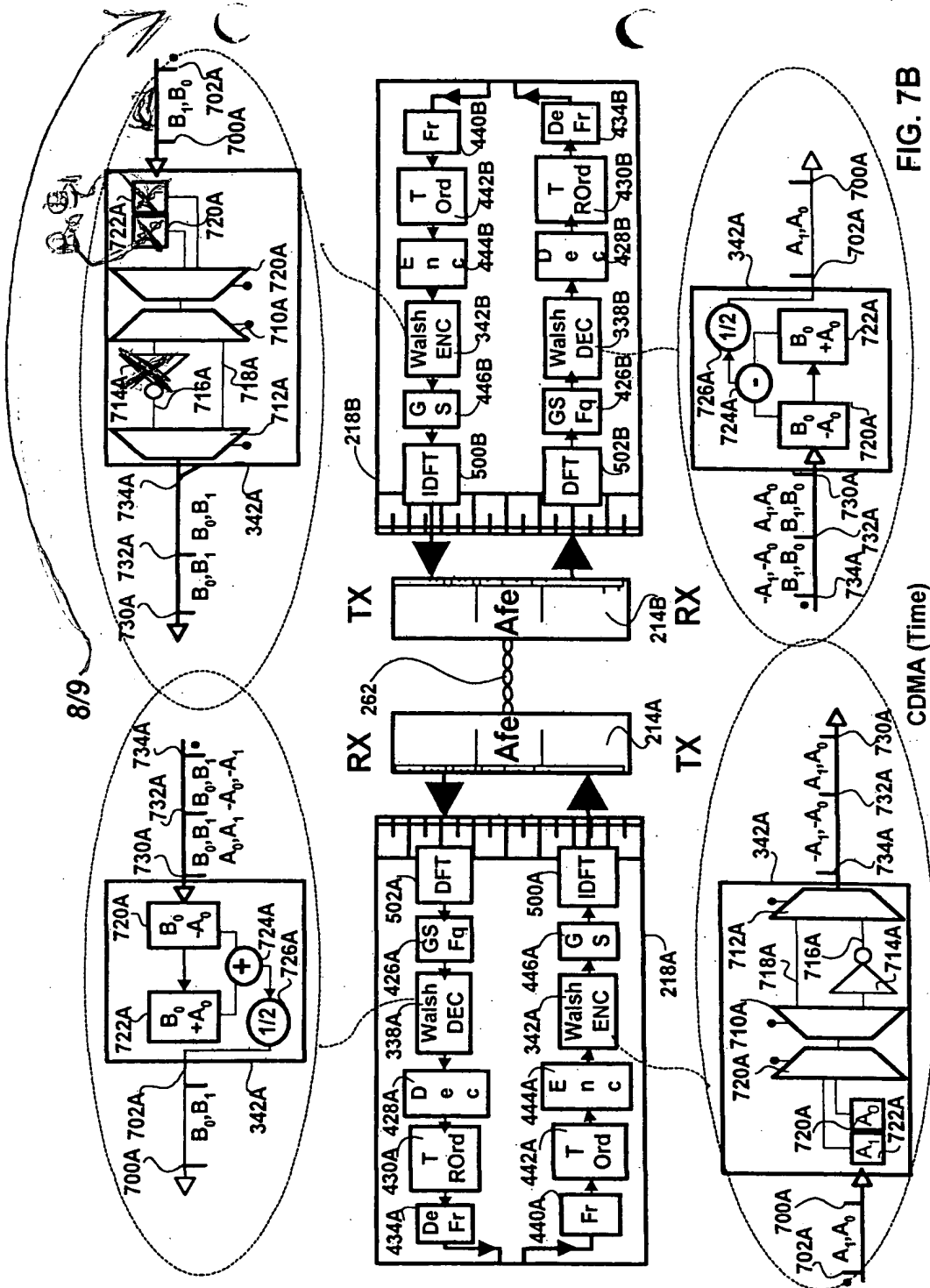


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